

WHAT IS CLAIMED:

1 1. An implant with a first piece having a first socket, a second piece
2 having a second socket and a crossbar member that is at least partially
3 received in the first socket and the second socket.

1 2. The implant of claim 1 wherein the crossbar member has first
2 and second bars that are perpendicular.

1 3. The implant of claim 1 wherein the crossbar member has a first
2 bar that is mounted above the second bar.

1 4. The implant of claim 1 wherein the crossbar member can pivot
2 on itself.

1 5. The implant of claim 1 wherein one of the first and second
2 socket is sloped to allow a rocking motion.

1 6. The implant of claim 1 wherein the crossbar forms a cross.

1 7. The implant of claim 1 wherein the crossbar forms a "T".

1 8. The implant of claim 1 wherein the crossbar forms a "+".

1 9. The implant of claim 1 wherein the crossbar has a first beam
2 and a second beam and further wherein the first beam of the crossbar
3 crosses the second beam of the crossbar at a midpoint along the second
4 beam.

1 10. The implant of claim 9 wherein the first beam of the crossbar
2 and the second beam of the crossbar are formed integrally.

1 11. The implant of claim 9 wherein the first beam of the crossbar
2 and the second beam of the crossbar are adhered to each other.

1 12. The implant of claim 9 wherein the first beam of the crossbar
2 abuts the second beam of the crossbar.

1 13. The implant of claim 9 wherein the first beam of the crossbar is
2 positioned at least partially above the second beam of the crossbar.

1 14. The implant of claim 1 wherein the crossbar has a first beam
2 and a second beam and further wherein the first beam of the crossbar
3 crosses the second beam of the crossbar between a midpoint of the second
4 beam and an end point of the second beam.

1 15. The implant of claim 1 wherein the first piece has a first surface
2 and a second surface wherein the first socket is located on the first surface
3 and a keel extends from the second surface.

1 16. The implant of claim 15 wherein the keel is oriented in a first
2 plane and the first socket is oriented in a second plane, and further wherein
3 the first plane and the second plane are perpendicular to each other.

1 17. The implant of claim 15 wherein the keel is oriented in a first
2 plane and the first socket is oriented in a second plane, and further wherein
3 the first plane and the second plane are parallel to each other.

1 18. The implant of claim 15 wherein the second piece has a first
2 surface and a second surface wherein the second socket is located on the
3 first surface and a keel extends from the second surface.

1 19. The implant of claim 18 wherein the keel is oriented in a first
2 plane and the first socket is oriented in a second plane, and further wherein
3 the first plane and the second plane are perpendicular to each other.

1 20. The implant of claim 18 wherein the keel is oriented in a first
2 plane and the first socket is oriented in a second plane, and further wherein
3 the first plane and the second plane are parallel to each other.

1 21. An implant adapted to be placed between two vertebral bodies
2 comprising:

3 an upper implant further comprising, a first surface that is
4 adapted to contact a bottom surface of an upper vertebral body, and a
5 second surface having a first concave socket;

6 a lower implant further comprising, a first surface that is adapted
7 to contacting an upper surface of a lower vertebral body, and a second
8 surface having a first concave socket; and

9 a crossbar member with a first beam that is received in the first
10 socket of the upper implant and a second beam that is received in the
11 first socket of the lower implant.

1 22. The implant of claim 21 wherein the concave socket in the upper
2 implant is oriented to lie in a plane parallel to a sagittal plane of a patient.

1 23. The implant of claim 21 wherein the concave socket in the upper
2 implant is oriented to lie in a plane perpendicular to a sagittal plane of a
3 patient.

1 24. A method of implanting a device between an upper and lower
2 vertebral body in a spine, the method comprising:

3 a. exposing an affected region of the spine anteriorly;

4 b. removing an affected disk;

5 c. cutting a keel receiving channel into the upper and lower
6 vertebral body using a keel cutting tool;

7 d. assembling the implant by inserting a crossbar member
8 between an upper implant and a lower implant; and

9 e. inserting the assembled implant between the vertebral
10 bodies.

1 25. A method of implanting a device between an upper and lower
2 vertebral body in a spine, the method comprising:

- a. exposing an affected region of the spine posteriorly;
- b. removing an affected disk;
- c. cutting a keel receiving channel into the upper and lower vertebral body using a keel cutting tool;
- d. assembling the implant by inserting a crossbar member between an upper implant and a lower implant; and
- e. inserting the assembled implant between the vertebral bodies.

26. An implant adapted to be mounted between adjacent vertebral bodies comprising:

an upper plate having a first surface that is adapted to engage a lower surface of an upper vertebral body, and a second surface with a socket;

a lower plate having a first surface that is adapted to engage an upper surface of a lower vertebral body, and a second surface with a socket;

a crossbar member having a first beam that is mounted at least partially above and across a second beam; and

wherein the first beam is positioned in one of the socket of the upper plate and the socket of the lower plate, and the second beam is positioned in the other of the socket of the upper plate and the socket of the lower plate.

27. The implant of claim 26 wherein one of the socket of the upper plate and the socket of the lower plate is oriented in a plane parallel to a sagittal plane of a patient and the other of the socket of the upper plate and the socket of the lower plate is oriented in a plane that is perpendicular to a sagittal plane of a patient.

28. The implant of claim 26 including a first keel extending from the first surface of the upper plate and adapted to engage the upper vertebral

3 body, and a second keel extending from the first surface of the lower plate
4 and adapted to engage the lower vertebral body.

1 29. The implant of claim 26 wherein said second surface of the
2 upper plate and the second surface of the lower plate slope away from each
3 other.

1 30. The implant of claim 26 wherein at least one of the second
2 surface of the upper plate and the second surface of the lower plate has a
3 portion that slopes away from the socket in order to allow for a greater
4 freedom of motion between the upper and the lower plates.

1 31. The implant of claim 26 wherein at least one of the second
2 surface of the upper plate and the second surface of the lower plate has a
3 portion that slopes away from the socket.

1 32. The implant of claim 26 wherein a fit between the crossbar and
2 the sockets of the upper and lower plates is loose in order to allow for a
3 twisting motion between the upper and the lower plates.

1 33. The implant of claim 26 wherein said upper plate can rotate on
2 one of the beams of the crossbar and the lower plate can rotate on the other
3 of the beams of the crossbar.

1 34. The implant of claim 26 wherein said upper plate can rotate
2 about a first axis on one of the beams of the crossbar and the lower plate can
3 rotate about a second axis that is perpendicular to the first axis on the other of
4 the beams of the crossbar.

1 35. An implant adapted to be positioned between vertebral bodies
2 comprising:

3 a first member with a first socket;
4 a second member with a second socket;

5 a spacer received in the first socket and the second socket with
6 the spacer spacing the first member from the second member and
7 allowing the first member to rotate about the spacer about a first axis
8 and allowing the second member to rotate about the spacer about a
9 second axis that is not parallel to the first axis.

1 36. An implant to be positioned between vertebral bodies
2 comprising:

3 a first member adapted to engage a first vertebral body;
4 a second member adapted to engage a second vertebral body;
5 a spacer that spaces the first member from the second member;
6 the spacer having a first axis about which the first member can
7 rotate and a second axis about which the second member can rotate,
8 with the first axis and the second axis not being parallel.